



LOUISIANA NATURAL AND SCENIC RIVERS SYSTEM

PERMIT APPLICATIONPermit # 916 (Assigned by Department)

The Louisiana Department of Wildlife and Fisheries' Scenic Rivers program is authorized by LRS title 56, Chapter 9 Part II. This law requires permits authorizing activities in or affecting rivers that have been designated by the Louisiana Legislature as Natural and Scenic. Information provided on this form will be used in evaluating the application for a permit. Information in this application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary, however, the data requested are necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

APPLICANT INFORMATION

Name of Applicant	Tommy Green	Name of Agent (if any)	Dennis A. McAfee
Address	Maurepas Pipeline, LLC	Address	QPS Engineering, LLC
Address	6120 South Yale Ave., Suite 700	Address	25227 Grogans Mill Road, Suite 110
City, State, Zip	Tulsa, OK 74136-4216	City, State, Zip	The Woodlands, TX 77380
Phone	918-524-7143	Phone	832-791-5255

DESCRIPTION OF THE PROPOSED ACTIVITY

Brief summary of the description and purpose of the proposed activity (details to be attached as a separate document)

A horizontal directional drill installation of 2 pipelines within a single corridor crossing the Blind River is proposed. The depth at which the drill is conducted will meet requirements of involved agencies. Scenic river best management practices will be followed.

Is any portion of the activity complete? YES ☒ NO (If yes indicate month and year of completion)

LOCATION OF PROPOSED ACTIVITY

Stream Name	Blind River	Names, Addresses, Phone Numbers of Adjacent Property Owners
Parish	St. James	Louisiana Department of Wildlife and Fisheries
Section	LA 24	State of Louisiana
Township	11 South	2000 Quail Dr.
Range	4 East	Baton Rouge, LA 70808
Latitude/Longitude	30° 6'12.46"N, 90°44'41.82"W	(225) 765-2800

ENVIRONMENTAL ASSESSMENT

Must be a separate document. See the attached instruction sheet for completing the assessment.

CONFIRMATION OF INFORMATION ACCURACY

Application is hereby made for a Scenic River Use Permit to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that, to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities, or I am acting as the duly authorized agent of the applicant.

Tommy Green MANAGER ENGINEERING
Signature & CONSTRUCTION

11/19/14

Date

November 24, 2014

Kyle Balkum
Louisiana Department of Wildlife and Fisheries
Scenic Rivers Program
P.O. Box 98000
Baton Rouge, LA 70898-9000

Re: Proposed Crossing of the Blind River

Dear Mr. Balkum:

QPS Engineering, LLC (QPSE) is submitting for review a Louisiana natural and scenic rivers system permit application for a pipeline project within Ascension, St. James, St. John the Baptist, and St. Charles Parishes. The application and attached documents have been prepared using information provided within the Scenic River Application. Please find within the permit package the following documents:

1. Scenic River Permit Application
2. Exhibit A – Map and Drawing Package
3. Exhibit B – Required Information
4. Exhibit C – Color Photographs
5. Exhibit D – Environmental Assessment
6. Exhibit E – Signed Legal Agreement
7. Exhibit F – Statement of Compliance History
8. Exhibit G – Cultural Resources Review
9. Exhibit H – HDD Contingency Plan – Will be submitted when completed

A public notice has been scheduled in the official state journal (The Advocate) and publication in the official journal of St. James (The News Examiner) Parish. Proof of these publications will be provided in Exhibit I – Proof of Notice as soon as they are received. While these publications are being conducted, please review the submitted package and determine if any additional information is necessary.

If you have any questions or required additional information, please contact Dennis McAfee at (832) 791-5255 or dennis.mcafee@qpsepc.com.

Sincerely,



Dennis A. McAfee, Jr.
Senior Project Manager

File location

cc: Svjetlana Lale
Don Wright
Tommy Green
Edith Coen



State of Louisiana

BOBBY JINDAL
GOVERNOR

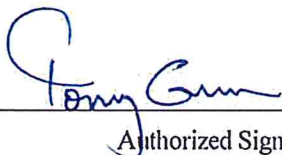
DEPARTMENT OF WILDLIFE AND FISHERIES

ROBERT J. BARHAM
SECRETARY

Dear Scenic River Permit Applicant:

Please review and concur on the following statement regarding the issuance of permits by the Louisiana Department of Wildlife and Fisheries. This agreement must be signed and returned before a Scenic River Permit can be issued.

"I have been advised and do understand that by applying for and accepting a Scenic Rivers permit issued by the Louisiana Department of Wildlife and Fisheries, I am being allowed to engage in an activity which would otherwise be prohibited by law or for which a permit is required. I understand that the permit is not a license and confers no property right upon me. I specifically agree to abide by all State and Federal fish and wildlife laws and regulations, and all State and Federal laws and regulations which relate to this permit or the permitted activity, and by all other terms and conditions of this permit. I understand that the permit for which I am applying may be suspended, annulled, withdrawn or revoked and that I may be assessed civil penalties, all in accordance with the provision of the Louisiana Administrative Procedure Act, and that I may be denied future permits as a consequence of my failure to fully and completely comply with the terms and conditions of the permit, as well as other laws and regulations pertinent thereto. If served with or notified of a cease and desist order signed by the Scenic Rivers Administrator, I agree to immediately and without delay cease all activities and operations which relate to the permitted activity or which are impacting the Scenic River, until such time as the matter can be resolved in an adjudicatory hearing pursuant to the Louisiana Administrative Procedure Act. I understand and agree that any permit issued to me by the Louisiana Department of Wildlife and Fisheries is in the nature of a privilege which is being voluntarily extended to me by the Department and the failure on my part to cooperate with the Department can result in the loss of the privilege conferred and the denial of future requests for permits. By accepting this permit, I evidence my agreement to be bound by all conditions and stipulations set forth herein."



Authorized Signature

11/19/14

Date

REV. 12/7/98

1.0 Project Description

Maurepas Pipeline, LLC proposes to construct and operate the Maurepas Pipeline in Ascension, St. James, St. John the Baptist, and St. Charles Parishes, Louisiana. The proposed pipeline project is composed of three separate pipelines, carrying crude oil, intermediates, and products. The three pipelines would transport materials between St. James, Burnside, and Norco, Louisiana. The proposed 12-inch, heated intermediates and 6-inch products pipelines would be collocated and approximately 35 miles in length between Burnside and Norco; the intermediates pipeline would transport west to east and the products pipeline would transport east to west. The 24-inch crude oil pipeline, approximately 34 miles in length, would be collocated adjacent to the intermediates and products pipelines for approximately 24 miles and would transport crude oil from St. James to Norco.

The 12-inch and 6-inch intermediates and products pipelines, collocated, would cross the Blind River in St. James Parish. The approximate location of the crossing is at 30° 6' 12.46"N, 90° 44' 41.82"W. The proposed crossing would be conducted by two horizontal directional drills. The proposed drill entry and exit sites would be set back from the Blind River as far back as practicable. Best management practices for oil and natural gas, as established by the Louisiana Department of Wildlife and Fisheries, would be followed as much as practicable.

2.0 List of Permits Required

The following permits are required for the Maurepas Pipelines Project. The agency responsible for accepting and approving each permit is listed along with the permit.

1. Scenic River – Louisiana Department of Wildlife and Fisheries
2. Joint Permit Application
 - a. Section 10 Navigable Waterways – USACE New Orleans District
 - b. Section 404 Clean Waters Act – USACE New Orleans District
 - c. Coastal Use Permit – Office of Coastal Management and St. James, St. John the Baptist, and St. Charles Parishes
 - d. Section 401 Water Quality Certification – Louisiana Department of Environmental Quality
3. General Construction Stormwater Permit – Louisiana Department of Environmental Quality
4. Hydrostatic Test Water Permit – Louisiana Department of Environmental Quality
5. Water Withdrawal Permit – Louisiana Department of Environmental Quality
6. Levee Crossing Permit – Pontchartrain Levee District

3.0 Steps Taken to Minimize Impact

Several alternatives to the proposed route as well as construction methods were considered to minimize impact to the Blind River. A route that minimized impacts to recreational activities and wilderness qualities, as well as other criteria, was selected. The construction methods, as well as placement of the HDD were chosen to also minimize impacts to recreational activities, wilderness qualities, and other criteria. A complete set of best management practices will be established prior to construction to protect the environment, personnel, and equipment.

4.0 Alternatives Analysis

Several alternatives were considered to minimize impacts to the Blind River, a Louisiana Scenic River. The first alternative considered was to modify the proposed route so that no crossing of the Blind River

was required. Due to the extensive size of the Blind River and the alignment of it being perpendicular to the proposed route, modifications to the route to avoid the Blind River were impracticable. Three alternative construction methods to complete the crossing were considered. The first would be a traditional open cut, trench method. This method would have directly impacted the Blind River requiring extensive clearing across the temporary and permanent ROWs and disturbance to hydrology. The second method considered was boring. Boring would not require disturbance to the hydrology of the river, but still required extensive clearing near the river. The third construction method considered was an HDD. An HDD would allow the entry and exit areas be set back from the banks of the River and prevent impacts to the hydrology of the system. Two HDDs will require clearing up to the river for the 50-foot permanent ROW only. To meet requirements of the Scenic River Program as well as protect this environmental resource, a decision was made to use an HDD and place entry and exit locations as far back from the river as practicably possible.

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1.0 INTRODUCTION

This report presents the results of an environmental assessment, as part of a permit package for scenic river crossings, of a pipeline crossing installation under the Blind River, a Louisiana Scenic River.

1.1 MAUREPAS PIPELINES PROJECT

Maurepas Pipeline, LLC proposes to construct and operate the Maurepas Pipelines in Ascension, St. James, St. John the Baptist, and St. Charles Parishes, Louisiana. The proposed pipeline project is composed of three separate pipelines, carrying crude oil, intermediates, and products. The three pipelines would transport materials between St. James, Burnside, and Norco, Louisiana. The proposed 12-inch, heated intermediates and 6-inch products pipelines would be collocated and approximately 35 miles in length between Burnside and Norco; the intermediates pipeline would transport west to east and the products pipeline would transport east to west. The 24-inch crude oil pipeline, approximately 34 miles in length, would be collocated adjacent to the intermediates and products pipelines for approximately 24 miles and would transport crude oil from St. James to Norco.

The 12-inch and 6-inch intermediates and products pipelines, collocated, would cross the Blind River in St. James Parish. The approximate location of the crossing is at 30° 6' 12.06"N, 90° 44' 40.35"W. The proposed crossing would be conducted by two horizontal directional drills (HDDs). The proposed drill entry and exit sites would be set back from the Blind River as far as practicable. Best management practices for oil and natural gas, as established by the Louisiana Department of Wildlife and Fisheries, would be followed as much as practicable.

2.0 METHODS

QPS Engineering, LLC conducted an environmental assessment of a proposed pipeline project crossing the Blind River in St. James Parish, Louisiana. A review of available information from USGS topographic maps, NWI datasets, aerial imagery, EPA water quality assessments, and USDA soil maps was conducted. The following items were evaluated during the environmental assessment: existing land use, historical or archeological sites, economic impact of the project, wilderness or rural quality, scenic or aesthetic value, recreational use or opportunities, ecological systems present, fish and wildlife in the area, botanical elements (vegetation), geological features, hydrological features, and water quality and quantity. A cultural and historical survey was conducted for the proposed project site.

3.0 RESULTS

3.1 (A) Existing Land Use

The proposed crossing of the Blind River is within the Maurepas Swamp Wildlife Management Area (WMA). The area is used as a managed environmental preserve with outdoor recreation activities including hunting, fishing, and wildlife viewing. The area provides flood control within the Mississippi River delta. The Blind River also provides access to areas within the WMA where there are no other means of access. The use of an HDD will prevent any disruption of travel upstream and downstream along the Blind River or recreational activities on the river. **No impact to existing land use is expected due to the use of an HDD.**

3.2 (B) Historical or Archeological Sites

A review of historical or archeological sites was conducted by SWCA Environmental Consultants. Experienced archeologists conducted surveys between August 29th and September 29th. No evidence of historical or archeological sites was identified. Please refer to Exhibit G of the permit application for the completed review. **No impact is expected as no historical or archeological sites are present.**

3.3 (C) Economic Impact of the Project

The proposed crossing will be part of a \$300 million project. The project will bring temporary and permanent economic increases to the region. The required personnel to complete the project construction will increase job availability and monetary expenditures in the region. Once the project is completed, it will allow for increased production at the facilities serviced by the pipelines. An increase in facility efficiency and capacity will continue economic investment in the region. **A positive impact is expected within the area caused by capital investment in the region.**

3.4 (D) Wilderness Quality

The region surrounding the proposed crossing is a bald cypress-tupelo swamp protected by the Maurepas Swamp WMA. The area immediately surrounding the proposed crossing has been extensively developed by railroads, pipelines, and transportation highways. The installation of another corridor adjacent to existing corridors will not degrade the current wilderness quality of the area. The use of an HDD will prevent degradation at the Blind River crossing. **No impact to wilderness quality is expected due to the use of an HDD.**

3.5 (E) Scenic and Aesthetic Value

The proposed pipeline crossing would occur approximately 1,000 feet west of Louisiana Highway 61. Between the proposed corridor and the highway, a railroad, an electrical transmission line, and several existing pipelines occur. The area surrounding the crossing is not currently of high scenic or aesthetic value from the extent of current development. The use of an HDD and clearing of only the permanent ROW will limit any further degradation to the scenic and aesthetic value of the scenic river. **No impact to scenic or aesthetic value is expected from the use of an HDD and the present condition of the area.**

3.6 (F) Recreational Use and Opportunities

The proposed crossing of the Blind River is within the Maurepas Swamp WMA. The area is used as a managed environmental preserve with recreational activities including hunting, fishing, and wildlife viewing. The Blind River provides access to areas within the WMA where there are no other means of access. The use of an HDD will prevent any disruption of recreational activities upstream and downstream along the Blind River. **No impact to recreational uses and opportunities is expected due to the use of an HDD.**

3.7 (G) Ecological Systems Present

The area surrounding the proposed crossing of the Blind River is a forested wetland adjacent to an emergent wetland. The area has typical wildlife and vegetation of a forested wetland (described below). The Blind River is a significant portion of the ecological systems present at the proposed crossing. To limit any negative impacts to the Blind River or the ecological systems, an HDD will be used for the proposed crossing. The entry and exit locations of the HDD will be set back as far as practical to further limit negative influences to the ecological systems. **No negative impacts are expected due to the use of an HDD.**

3.8 (H) Fish and Wildlife in the Area

Aquatic species known to occur within the Blind River watershed include the following species: *Trinectes maculatus* (Northern hogchoker), *Amia calva* (bowfin), *Aphredoderus sayanus* (pirate perch), *Anguilla rostrata* (American eel), *Labidesthes sicculus* (Brook silverside), *Menidia beryllina* (Inland silverside), *Ictiobus cyprinellus* (bigmouth buffalo), *Lepomis cyanellus* (green sunfish), *Lepomis humilis* (orangespotted sunfish), *Lepomis megalotis* (longear sunfish), *Lepomis gulosus* (warmouth), *Lepomis macrochirus* (bluegill), *Lepomis marginatus* (dollar sunfish), *Lepomis microlophus* (redeer sunfish), *Micropterus punctulatus* (spotted bass), *Micropterus salmoides* (northern largemouth bass), *Micropterus floridanus* (Florida bass), *Pomoxis annularis* (white crappie), *Pomoxis nigromaculatus* (black crappie), *Alosa chrysochloris* (skipjack herring), *Brevoortia patronus* (Gulf menhaden), *Dorosoma cepedianum* (gizzard shad), *Dorosoma petenense* (threadfin shad), *Cyprinus carpio* (common carp), *Cyprinella venusta* (blacktail shiner), *Notemigonus crysoleucas* (golden shiner), *Opsopoeodus emiliae* (pugnose minnow), *Pimephales promelas* (fathead minnow), *Elops saurus* (ladyfish), *Anchoa mitchilli* (bay anchovy), *Fundulus chrysotus* (golden topminnow), *Ameiurus melas* (black bullhead), *Ameiurus natalis* (yellow bullhead), *Ictalurus furcatus* (blue catfish), *Ictalurus punctatus* (channel catfish), *Pylodictis olivaris* (flathead catfish), *Atractosteus spatula* (alligator gar), *Lepisosteus oculatus* (spotted gar), *Lepisosteus osseus* (longnose gar), *Morone mississippiensis* (yellow bass), *Mugil cephalus* (striped mullet), *Paralichthys lethostigma* (southern flounder), *Gambusia affinis* (western mosquitofish), *Poecilia latipinna* (sailfin molly), *Aplodinotus grunniens* (freshwater drum), *Micropogonias undulates* (Atlantic croaker), *Alligator mississippiensis* (American Alligator), *Aix sponsa* (wood duck), and *Dendrocygna autumnalis* (Black-bellied whistling duck). Non-aquatic wildlife in the area includes *Myocastor coypus* (Nutria), *Odocoileus virginianus* (White-tailed deer), *Sylvilagus aquaticus* (swamp rabbit), and *Sylvilagus floridanus* (eastern cottontail rabbit) (Walley 2012). The area is also within the Mississippi Flyway, an area of concentrated migratory bird movement. Many species of migratory birds are present within the area during the migration seasons. The Maurepas Swamp WMA is an extensive natural area with a significant variety of wildlife. The use of an HDD will limit impacts to species that both reside within and utilize the Blind River. The use of the Blind River by species on its periphery will be limited by only clearing the permanent ROW. **No impact on fish or wildlife in the area is expected due to the use of an HDD.**

3.9 (I) Botanical Elements

The area surrounding the proposed crossing is characterized as a backswamp dominated by *Taxodium distichum* (bald cypress) and *Nyssa aquatica* (water tupelo). The area to the east of the crossing has been disturbed by previous right-of-way projects and is maintained as an emergent wetland. Areas dominated by *T. distichum* and *N. aquatica* represent undisturbed, natural vegetation. Through the use of an HDD no disturbance to vegetation surrounding and adjacent to the proposed crossing will be required. **No impact to botanical elements is expected due to the use of an HDD.**

3.10 (J) Geological Features

The area was once frequently flooded by high flows of the Mississippi River; it is now frequently flooded by anthropogenic alteration of Mississippi floodwaters and high annual precipitation. The area surrounding the proposed pipeline project is characterized as an alluvial coastal plain or backswamp. The area is influenced by both the Mississippi River and the Gulf of Mexico. The area surrounding the proposed pipeline crossing consists of Barbary soils which have a parent material of fluid clayey alluvium (USDA 2014). To prevent soil erosion into the Blind River, in part, an HDD will be used. The entry and exit locations of the HDD will be setback as far from the edge of the Blind River as possible. **No impact to geological features is expected due to the use of an HDD.**

3.11 (K) Hydrological Features

The Blind River is fed by precipitation within the Lake Maurepas watershed. The area surrounding the proposed crossing is frequently flooded with water flowing into the Blind River and continuing downstream to Lake Maurepas. In times of low precipitation, the Blind River can back flow from Lake Maurepas. The forested wetland surrounding the Blind River was traditionally contiguous with those surrounding Lake Maurepas. The development of Highway 61 and an adjacent railroad alongside it have reduced flow into the wetlands surrounding the lake. Large portions of water movement have been diverted to canals and rivers that pass under bridges of the highway and railroad. The Blind River represents one area where significant flow from within the adjacent wetlands is diverted. To prevent further alteration to the hydrology of the area an HDD will be utilized. The entry and exit locations of the drill will be located as far back as practical from the Blind River to minimize any impacts. **No impact to hydrological features is expected due to the use of an HDD.**

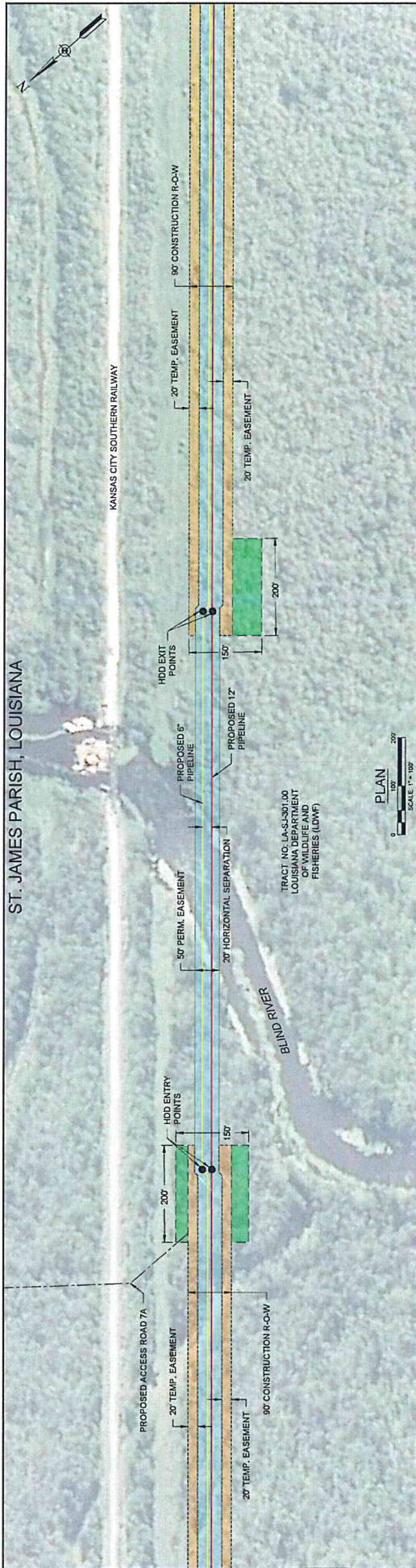
3.12 (L) Water Quality and Quantity

The Blind River has been designated a section 303(d) impaired water by the EPA from headwaters to the Amite River Diversion Canal along the borders between Ascension and Livingston Parishes. A 2012 Waterbody Report identified three causes of impairment; dissolved oxygen, mercury in fish tissue, and non-native aquatic plants (EPA 2012). An HDD will be utilized for the crossing, in part, to prevent further degradation of the Blind River. The drill entry and exit sites will be located as far from the banks of the Blind River as possible to prevent contamination from runoff. The sites will be established using temporary timber mats to reduce impact to the areas surrounding the river. **No impact is expected to water quality or water quantity due to the use of an HDD and temporary access roads.**

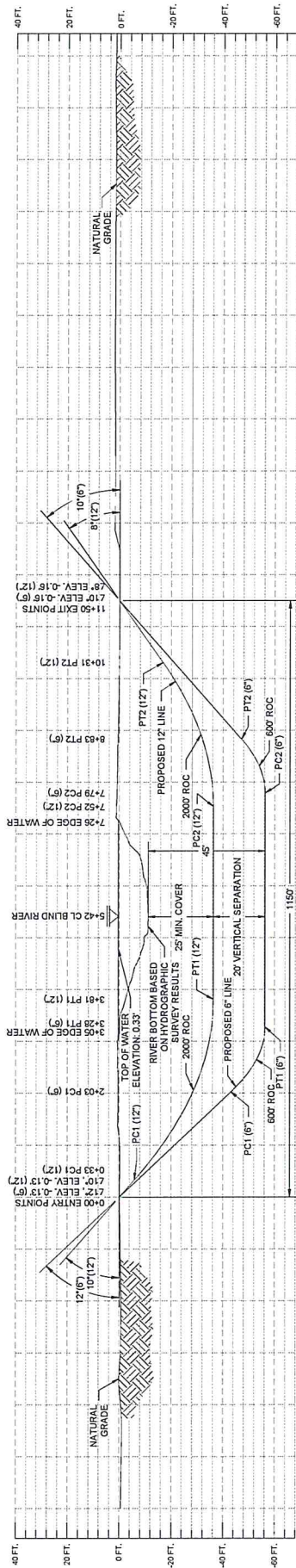
4.0 CONCLUSION

A review of the twelve criterion, existing land use, historical or archeological sites, economic impact of the project, wilderness or rural quality, scenic or aesthetic value, recreational use or opportunities, ecological systems present, fish and wildlife in the area, botanical elements, geological features, hydrological features, and water quality and quantity, was conducted. The environmental review did not identify any attributes that would be negatively impacted by the proposed activity. The use of an HDD to cross the Blind River paired with the application of best management practices limits negative influences to near zero. It is the opinion of this environmental review that the proposed pipeline project, The Maurepas Pipelines Projects, would not negatively impact the Blind River, a Louisiana Scenic River.

ST. JAMES PARISH, LOUISIANA



PLAN
SCALE 1" = 100'



PROFILE
SCALE 1" = 10'

- NOTES:
1. THIS DRAWING IS PRELIMINARY AND IS SUBJECT TO CHANGE BASED ON CIVIL SURVEY AND GEOTECHNICAL SURVEY DATA.
 2. CONTRACTOR TO SUPPORT EXISTING UTILITIES/SEWERS.
 3. CONTRACTOR TO GRADE EXCAVATION AREA AND RESTORE TO ORIGINAL CONDITION.
 4. CONTRACTOR TO LOCATE AND MARK (OR POHOLE WHERE NECESSARY) EXISTING UTILITY LINES PRIOR TO EXCAVATION (AND
 5. CONTRACTOR TO LOCATE AND MARK OVER EXISTING LINES WHERE NECESSARY, INCLUDING ACCESS TO AND FROM THE
 6. WORK SITE FROM THE ACCESS ROAD.
 7. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND DEPTH UNKNOWN.
 8. SITE ACCESS TO BE DETERMINED.

HORIZONTAL DIRECTIONAL DRILL DATA (6")			T.B.M. ELEVATION		
DESCRIPTION	STATION	ELEVATION	TD	STATION	ELEVATION
ENTRY @ 12"	0+00	-41.37		0+00	-41.37
POINT OF CURVATURE 1 (600' RADIUS)	2+03	-47		0+33	-47
POINT OF TANGENT 1 (BEGIN HORIZONTAL SECTION)	3+28	-56		3+61	-56
POINT OF CURVATURE 2 (600' RADIUS)	7+19	-56		7+52	-56
POINT OF TANGENT 2	8+43	-47		10+31	-17
EXIT @ 10"	11+50	-41.16		11+50	-41.16

HORIZONTAL DIRECTIONAL DRILL DATA (12")			T.B.M. ELEVATION		
DESCRIPTION	STATION	ELEVATION	TD	STATION	ELEVATION
ENTRY @ 10"	0+00	-41.37		0+00	-41.37
POINT OF CURVATURE 1 (2000' RADIUS)	0+33	-47		0+33	-47
POINT OF TANGENT 1 (BEGIN HORIZONTAL SECTION)	3+61	-56		3+61	-56
POINT OF CURVATURE 2 (2000' RADIUS)	7+52	-56		7+52	-56
POINT OF TANGENT 2	10+31	-17		10+31	-17
EXIT @ 10"	11+50	-41.16		11+50	-41.16

811
Know what's below.
Call before you dig.

MAUREPAS PIPELINES PROJECT
BLIND RIVER
HORIZONTAL DIRECTIONAL DRILL

OPB ENGINEERING, LLC
OPB Engineering, LLC
Exchange Tower, Suite 700
Tulsa, OK 74146
Office: (918) 556-7620
www.opbape.com

80095 800-D-P1501

REV	DATE	DESCRIPTION
A	11/07/14	PRELIMINARY DRAFT ISSUE
B	11/07/14	REVISED TO 12" DIAMETER (2000' RCD)
C		
D		
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NOTE:
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION AND IT SHALL NOT BE USED OR REPRODUCED OR ITS CONTENTS DISCLOSED, IN WHOLE OR IN PART, WITHOUT THE PRIOR WRITTEN CONSENT OF OPB ENGINEERING, LLC.
SCALE OF DRAWINGS ARE FOR A3 3" SIZE (24"x36") PRINTS. REPRODUCTION AT DIFFERENT SCALES WILL RESULT IN DISTORTION.

1.0 COLOR PHOTOGRAPHS

All photographs were taken on October 21st, 2014. Full resolution digital files, as well as additional photographs, are available from Dennis McAfee (dennis.mcafee@qpsepc.com or 832-791-5255).

1.1 Northern Bank of Blind River

- 1.1.1 Photograph taken from the north side of the Blind River looking northwest along the proposed route.



1.1.2

Photograph taken from the north side of the Blind River looking north and upstream.



1.1.3

Photograph taken from the north side of the Blind River looking south and downstream.



1.2 Southern Bank of Blind River

1.2.1 Photograph taken from the south side of the Blind River looking southeast along the proposed route.



1.2.2 Photograph taken from the south side of the blind river looking north and upstream.



1.2.3

Photograph taken from the south side of the Blind River looking south and downstream.

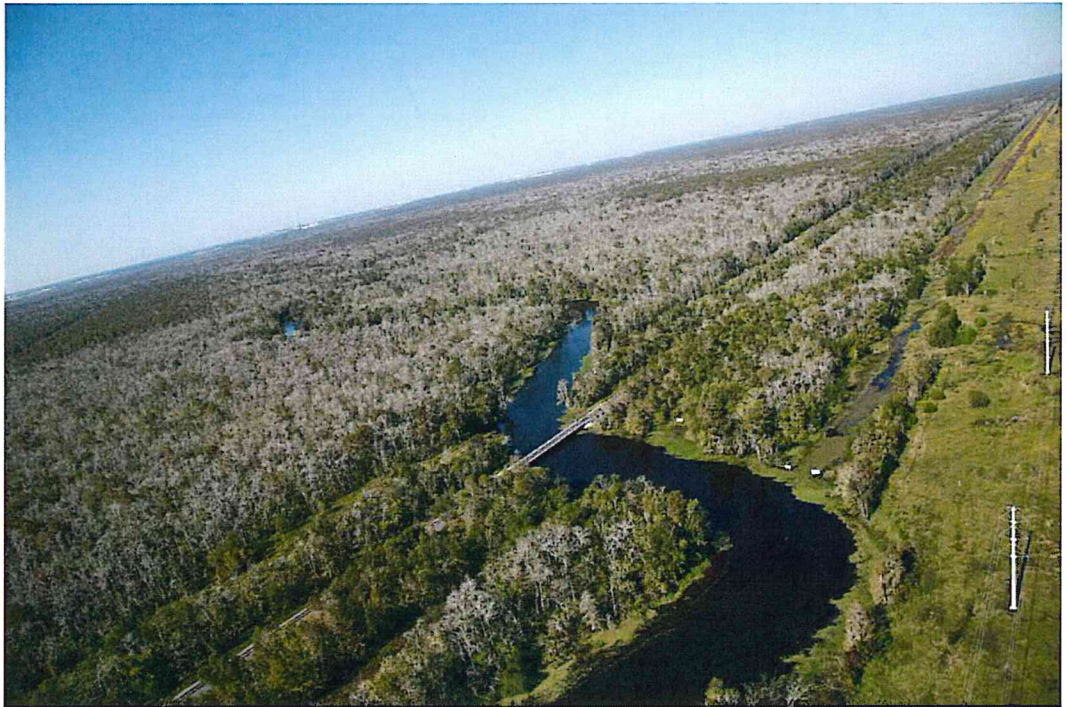


1.3

Aerial Photographs

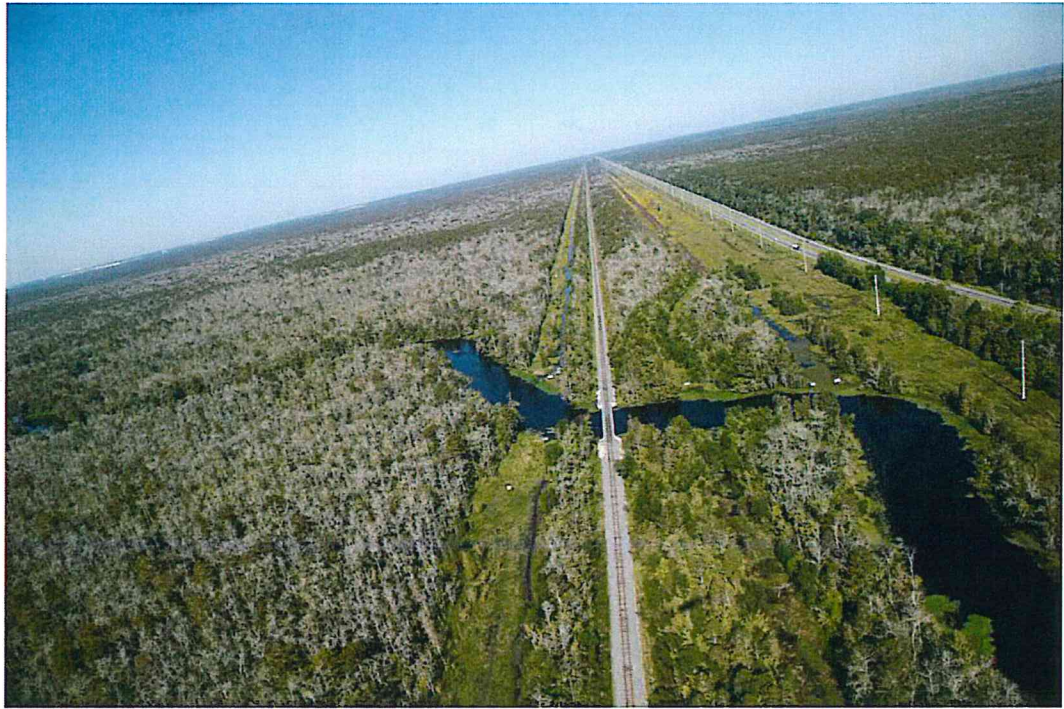
1.3.1

Photograph taken from the southeast side of the proposed crossing looking northwest.



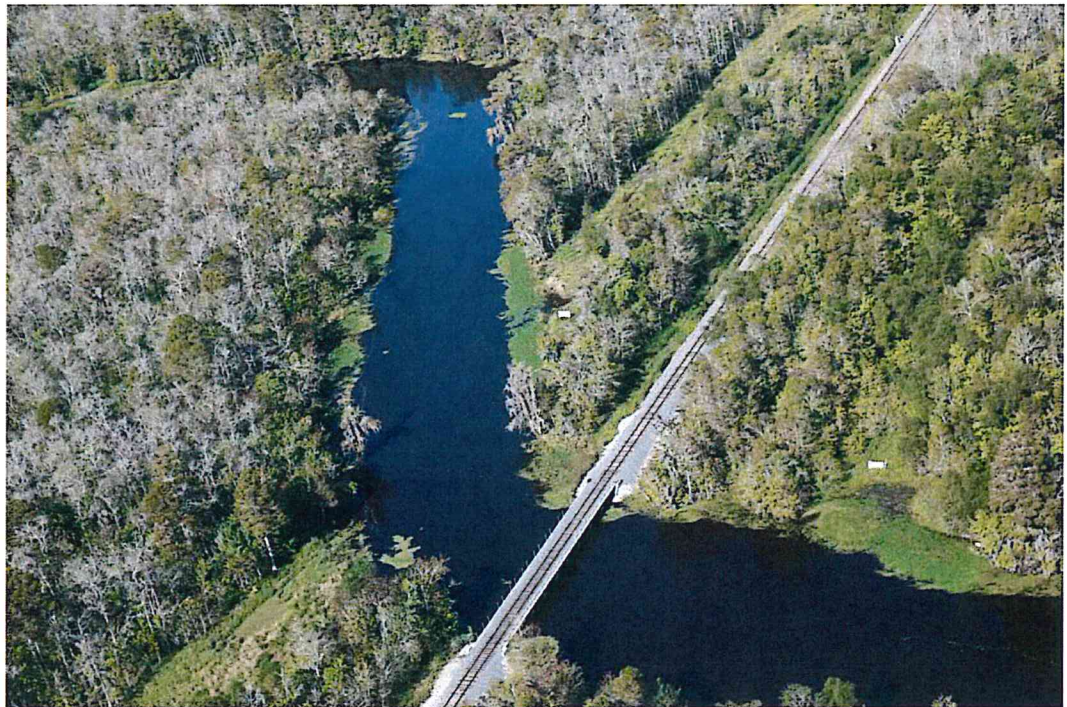
1.3.2

Photograph taken from the south side of the proposed crossing looking north.



1.3.3

Photograph taken from the south side of the proposed crossing looking north.



1.3.4

Photograph taken from the north side of the proposed crossing looking south.

